Waste Reduction Goal Talk Force
BRIEFING PAPER
For
Other Waste Reduction Strategies

Background:
There are numerous strategies for encouraging a reduction of solid waste.

Taxing waste disposal, directly or indirectly, is one method of encouraging the reduction of landfill waste. This can involve (1) a flat fee levied by a government entity and billed directly to the homeowner or added in with a monthly utility bill; (2) a portion of a homeowner's property tax dedicated to solid waste management costs; (3) Pay-As-You Throw (PAYT), a 'unit-based rate' where the homeowner is charged by the container or by the pound. An example of PAYT in Tennessee is Van Buren County, which charges $0.11 per pound ($220/TON) for solid waste disposed of at convenience centers. When Van Buren County introduced PAYT in 1999, its disposed waste decreased by approximately 73%; however, since there was no substantial increase in recycling volume it would suggest that residents simply disposed of their waste in some other manner. Since that time, Van Buren's disposed waste has gradually increased to approximately 63% of its pre-PAYT rate with some increase in recycling, thereby suggesting an increasing acceptance for this program. Over 4,000 communities nationwide claim varying degrees of success using PAYT: San Jose, CA reports recycling rate increase from 28% to 43%; and Seattle, WA increased its recycling from 19% to 49%. According to PAYT promoters, "the key to making the program work is by providing convenient opportunities for people to do something with their trash other than throwing it out." Normally, with PAYT, there is no charge for recyclable waste placed in recycling bins at convenience centers or collected via curbside recycling. (4) Increased surcharge costs may provide a deterrent to disposal and encourage greater recycling or less expensive waste reduction or disposal options.

Alternative Energy **(Waste to Energy or WtE)** involves a conversion of solid waste to energy. Waste-to-energy (WtE), in its strictest sense, refers to any waste treatment that creates energy in the form of electricity and/or heat from a waste source that would have been disposed of in landfill, also called energy recovery. Some WtE processes result in usable fuel commodity, such as methane, methanol or ethanol, upon completion of process. Modern WtE is considered to be a source of partly renewable energy by the USA federal government and 16 US states that have established renewable energy programs. Also some European countries that have established renewable energy programs consider energy production from the biodegradable component of the waste combusted through WtE (approximately 60-80 %) as renewable.

Incineration is a form of alternative energy and is a waste disposal method that involves the combustion of waste at high temperatures. Incineration and other high temperature waste treatment systems are described as "thermal treatment". In effect, incineration of waste materials converts the waste into heat, gaseous emissions, and residual solid ash. A waste-to-energy plant (WtE) is a modern term for an incinerator that burns wastes in high-efficiency furnace/boilers to produce steam and/or electricity

and incorporates modern air pollution control systems and continuous emissions monitors.

Pyrolysis is the chemical decomposition of organic materials by heating in the absence of oxygen or any other reagents, except possibly steam. It is used in chemical analysis to break down complex matter into simpler molecules for identification, for example by pyrolysis gas chromatography mass spectrometry. Industrially, it may be used to convert one single chemical, for example ethylene dichloride is pyrolysed to vinyl chloride to make PVC. It may also be used to convert complex materials such as biomass or waste into substances which are either desirable or less harmful.

Gasification is a process that converts carbonaceous materials, such as coal, petroleum, or biomass, into carbon monoxide and hydrogen by reacting the raw material at high temperatures with a controlled amount of oxygen. The resulting gas mixture is called synthesis gas or syngas and is itself a fuel. Gasification is a very efficient method for extracting energy from many different types of organic materials, and also has applications as a clean waste disposal technique. Almost any type of organic material can be used as the raw material for gasification, such as wood, biomass, or even plastic waste. Thus, gasification may be an important technology for renewable energy.

Anaerobic Digesters convert solid waste to useable products, usually methane gas, carbon dioxide, and compost, using a process involving an absence of free oxygen. These digesters "cook" the waste, creating the gas and carbon dioxide, and convert the remaining waste to compost, from which certain materials (i.e. metals) can be removed for recycling. Sevier County Solid Waste had been using such a process to handle the county's waste for years until a recent fire damaged the plant.

Incentives for a county or region to reduce waste may come from several directions, for example, meeting the 25% reduction goal makes a county or region eligible to receive division grants.

Recycling is one of the more important tools for achieving the reduction goal. Recycling creates jobs in the community, stimulates the economy, generates revenue from the sale of recyclable materials, avoids landfill expansion costs, saves tipping fees, etc. All of these serve as incentives for a county or region to reduce waste.

Convenience, including curbside recycling, recycle bins at convenience centers, programs like Philadelphia's ***Recycle Bank*** where recycling earns credit points that may be redeemed at many local and national retail firms, are examples of incentives for residents to participate in waste reduction programs.

Disincentives and Sanctions:

A county or MSW region might be deterred from achieving the waste reduction goal by a lack of funding that would enable its full participation in a waste management program. Higher tipping fees, surcharges, penalties, loss of funding, Loss of eligibility for state grant funds, and the cost of non-compliance penalties can also be considered disincentives.

Failure of a region either to meet the 25% waste reduction and diversion goal, or to receive a favorable qualitative assessment of its waste reduction activities, may subject the offending county and its municipalities, including any solid waste authority created by them, to sanctions in the same manner as a region may receive for failure to submit an adequate solid waste plan, or for noncompliance. These sanctions include: (1) On the first instance of non-compliance, a warning letter from the commissioner indicating the reason for non-compliance, setting forth the sequence of graduated sanctions for non-compliance, and offering technical assistance to remedy the causes of the non-compliance. (2) If non-compliance continues for thirty (30) days after receipt of the warning letter, the non-complying county or region shall lose eligibility for funds from the solid waste management fund, unless the commissioner states in writing that due to particular circumstances a longer time is appropriate. (3) If non-compliance continues for sixty (60) days after receipt of the warning letter, then, in addition to any other penalty imposed by law, the commissioner may impose a civil penalty of not more than five thousand dollars ($5,000) for each day of non-compliance beyond such sixty-day period.

Issues:
To Be Determined By Task Force

Focus Questions:

1. Are there other solid waste and waste reduction activities and/or programs that need to be addressed?

2. Should the State pursue any particular type of other waste reduction strategy not listed or listed above?

3.